

TRANSPARENT PANEL-FORM LOUDSPEAKER

ABSTRACT OF THE DISCLOSURE

09989604.1.12001

A transparent panel-form loudspeaker consists of a transparent
5 sound radiation panel that can radiate sound with desired pressure level
over a specific frequency range when subjected to the flexural vibration
induced by a preselected number of transducers located at specific
positions on the peripheral edge of the transparent sound radiation panel
and a rigid frame carrying a flexible suspension device which supports
10 the periphery of the transparent sound radiation panel. The transparent
sound radiation panel is made of a kind of transparent materials with the
ratio of elastic modulus to density in the range from 3 to 180 GPa/(g/cm³)
and the ratio of length to thickness of the transparent sound radiation
panel in the range from 80 to 600. The flexible suspension device
15 supporting the periphery of the transparent sound radiation panel is used
to modify the vibrational characteristics of the transparent sound
radiation panel for an effective generation of the vibrational normal
modes which are beneficial for sound radiation. The transducers are
situated at predetermined locations on the peripheral edge of the
20 transparent sound radiation panel so that relatively high radiation
efficiency and more uniform spread of sound pressure level spectrum
can be produced by the transparent sound radiation panel over a desired
operative acoustic frequency range.